R E P O R T R E S U M E S

ED 010 633 64

MEDIA, CREATIVITY, AND CHANGE.

BY- BECK, LESTER F.
OREGON STATE SYSTEM OF HIGHER EDUCATION, MONMOUTH

REPORT NUMBER NDEA-VIIB-534 PUB DATE 66
REPORT NUMBER BR-5-0285
GRANT OEG-5-16-036
EDRS PRICE MF-$0.09 HC-$0.72 18P.

DESCRIPTORS- *CREATIVITY, *INSTRUCTIONAL MATERIALS, TELEVISED INSTRUCTION, ORIENTATION, CONFERENCES, FILMS, CREATIVE TEACHING, *COGNITIVE ABILITY, EDUCATIONAL ENVIRONMENT, MASS MEDIA, EDUCATIONAL CHANGE, INDEPENDENT STUDY, PRODUCTIVE THINKING, *INSTRUCTIONAL INNOVATION, LEARNING, *CREATIVE THINKING, MONMOUTH, OREGON

A MOTION PICTURE SCRIPT, SUMMARIZING THE RESULTS OF SEVERAL CONFERENCES ON CREATIVITY, WAS PREPARED FOR USE IN AN EDUCATIONAL TELEVISION FILM. VARIOUS TOPICS WERE DISCUSSED BRIEFLY IN THE SCRIPT, INCLUDING (1) THE RELATIONSHIP BETWEEN INTELLIGENCE AND CREATIVITY, (2) THE CONSCIOUS AND UNCONSCIOUS FACETS OF CREATIVE ABILITY AND THEIR MEASUREMENT, (3) THE CREATIVE EDUCATIONAL ENVIRONMENT AND ITS TECHNIQUES OF TEAM TEACHING, UNGRADED CLASSES, FLEXIBLE SCHEDULING, AND INTERACTION OF SCHOOL STAFF AND PUPIL, (4) IMAGINATIVE USES OF MEDIA FOR CREATIVE, INDEPENDENT ACTIVITY AND PRODUCTIVE THINKING, AND (5) THE ROLE OF COMPUTER-ASSISTED INSTRUCTION IN CREATIVE LEARNING. THE CONFERENCES, WHOSE RESULTS WERE USED FOR DEVELOPING THE SCRIPT'S CONTENT, WERE CONDUCTED BY DR. CALVIN TAYLOR (PSYCHOLOGY DEPARTMENT, UNIVERSITY OF UTAH). (JH)

ED010633

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

B-534
5-0285

MEDIA, CREATIVITY, AND CHANGE

A motion picture script

prepared under Title VII-B

National Defense Education Act of 1958

Grant Number: OE-5-16-036

Lester F. Beck

Teaching Research

Oregon State System of Higher Education

Monmouth, Oregon

Forward

The attached film script aims at a target audience of teachers in elementary and secondary schools, curriculum supervisors, college faculties, college students preparing to be teachers, media specialists including film and TV producers and A-V supervisors, research personnel in the field of creativity and knowledgeable public.

It is expected that the film, when produced, will enjoy wide distribution on educational television. It also will serve as a "feature" at local and national conventions of teachers and other school personnel.

Specifications of the proposed film are 16 mm sound, color, 28½ minutes running time (for TV), live actions combined with animation, documentary quality.

The script summarizes the thoughts of several conferences on creativity conducted by Dr. Calvin Taylor and published in the following works:

1. Scientific Creativity: Its Recognition and Development, Wiley & Sons, 1964.
2. Creativity: Progress and Potential, McGraw-Hill, 1964.
3. Widening Horizons in Creativity, Wiley & Sons, 1965.
4. Instructional Media and Creativity, Wiley & Sons, 1966
5. Climate for Creativity, to be published in 1967.

MEDIA, CREATIVITY, AND CHANGE

The film opens on a lively, attractive four year old girl, Susan, who is seated at a small table crowded with psychological test materials. Susan is carefully copying a geometrical figure, a triangle. The camera pulls back to reveal a psychologist who is administering a mental test to the child. The psychologist is Dr. Elizabeth Starkweather, Oklahoma State University, renowned for her pioneering research work on the development of measures of creative behavior in preschool children.

DR. STARKWEATHER

AND NOW SUSAN, MAKE ANOTHER ONE JUST LIKE THIS ONE.

(Points to triangle).

The child quickly completes the figure.

DR. STARKWEATHER

NOW I'LL SHOW YOU SOME PICTURES AND I WANT YOU TO NAME THEM FOR ME.

The child identifies dog, house, car, doll, shoe, etc.

DR. STARKWEATHER fashions a bead-chain as the narrator comments as follows:

NARRATOR (offstage voice)

WHAT YOU ARE SEEING ARE TASKS SIMILAR TO THOSE USED IN TESTS OF INTELLIGENCE. THE CHILD'S RESPONSES ARE SCORED RIGHT OR WRONG IN ACCORDANCE WITH STANDARDIZED NORMS.

Dr. Starkweather drops the bead chain and selects a creativity form board.

NARRATOR

THIS FORM BOARD IS A TEST OF A DIFFERENT KIND AND IT IS SCORED DIFFERENTLY, TOO. IT IS A TEST OF CREATIVE BEHAVIOR MORE THAN OF INTELLIGENCE.

The creativity form board has pictures showing in a half-dozen apertures. Arrayed beside the form board are pairs of picture blocks which fit the apertures in question. One block of each pair carries a picture like that on the form board. The other is different. The child has the option of filling the aperture either with a matching figure (conformity) or a divergent figure (non-conformity or creativity).

DR. STARKWEATHER

SUSAN, WOULD YOU LIKE TO FILL THESE HOLES WITH THE BLOCKS? YOU MAY USE WHICHEVER BLOCKS YOU LIKE BEST.

NARRATOR

NOTICE THAT SUSAN IS CHANGING THE FORM BOARD BY THE PICTURES SHE SELECTS. SHE IS DISREGARDING THE BACKGROUND PICTURES AND COMPLETING THE FORM BOARD IN A NEW AND DIFFERENT WAY. SHE IS BEING SPONTANEOUS, AND CREATIVE.

The film dissolves to a second child, Betty, taking the same test.

NARRATOR

BETTY HAS AN IQ IDENTICAL TO SUSAN'S, BUT SHE BEHAVES QUITE DIFFERENTLY ON THE FORM BOARD TEST. NOTICE THAT BETTY'S CHOICES CONFORM TO THE PICTURES ON THE BOARD. WHEN SHE FINISHES, THE TOTAL FIGURE WILL LOOK THE SAME AS IT DID AT THE OUTSET. BETTY'S BEHAVIOR IS BOUND BY WHAT SHE SEES.

Dr. Starkweather now arranges additional items including ambiguous forms, "easy" and "hard" figures, and the like.

NARRATOR

IN MEASURING CREATIVITY, UNLIKE INTELLIGENCE, THE AIM IS TO DETERMINE THE DEGREE THAT THE CHILD ARRIVES AT SOMETHING NEW, NEW IDEAS, NOVEL SOLUTIONS TO PROBLEMS, ORIGINAL CHOICES AND ACTIVITIES. IN OTHER WORDS, HOW FLEXIBLE IS THE CHILD IN HIS THINKING?

Dr. Starkweather now gives Betty ten ambiguous red forms. She holds ten forms of identical shape that are colored blue.

DR. STARKWEATHER
(Pointing to red sphere)

WHAT IS YOURS, BETTY?

BETTY

A BALL.

DR. STARKWEATHER

AND WHAT IS MINE?

BETTY

A BALL.

The film dissolves back to Susan. Dr. Starkweather has given her the same forms as Betty.

DR. STARKWEATHER

WHAT IS YOURS?

SUSAN

A BALL.

DR. STARKWEATHER

AND MINE?

SUSAN

A BALLOON.

Fade out.

Fade in on a half-dozen psychologists seated around a conference table. Others are in the background as observers. This arrangement repeats the structure of the Torrey Pines Conference on Creativity, 1964; the Greenborough Conference, 1966; and, to a degree, the Utah Workshop on Creativity, 1966. Dr. Starkweather is demonstrating one of her preschool tests, willingness-to-try-the-new, to the group. She says:

DR. STARKWEATHER

IT IS MY EXPERIENCE THAT THE MOST INTELLIGENT CHILD IS NOT ALWAYS THE MOST CREATIVE CHILD. INTELLIGENCE AND CREATIVITY ARE NOT THE SAME, PSYCHOLOGICALLY SPEAKING.

DR. GUILFORD

WE HAVE COME TO ESSENTIALLY THE SAME CONCLUSION FROM OUR TESTING OF ADULTS. FACTOR ANALYSES SHOW THAT THE CREATIVITY DIMENSIONS ARE QUITE DISTINCT FROM THE INTELLIGENCE DIMENSIONS.

As Dr. Guilford talks, an animated model takes shape in color to illustrate the array of hypothesized factors comprising the human intellect. Portions of the model are differentiated by color as intelligence factors versus creativity factors.

DR. GUILFORD

I HAVE DESIGNED A THEORETICAL MODEL WHICH ILLUSTRATES THE DIMENSIONS OF THE HUMAN INTELLECT. THIS MODEL PROPOSES A TOTAL OF 120 FACTORS. TRADITIONAL TESTS OF INTELLIGENCE PROBABLY TAP ONLY 10 OR 12 OF THE FACTORS THAT COM- COMPRISE THE INTELLECT. CREATIVITY RESTS ON AT LEAST ANOTHER DOZEN FACTORS, SOME OF WHICH STILL REMAIN TO BE MEASURED SATISFACTORILY.

DR. BECK

IT'S HARD TO CONCEIVE OF A CREATIVE PERSON WHO IS NOT INTELLIGENT.

DR. GUILFORD

INTELLIGENCE HELPS TO BRING THE CREATIVE PERSON INTO SITUATIONS WHERE THE CREATIVE PROCESS CAN BE DISPLAYED OR OBSERVED. BUT INTELLIGENCE PER SE IS NO SURE SIGN OF THE LEVEL OF CREATIVITY.

DR. MACKINNON

IN OUR INSTITUTE WE HAVE BEEN ASSESSING THE PERSONALITY TRAITS THAT DISTINGUISH HIGHLY CREATIVE ARCHITECTS, WRITERS, AND RESEARCH SCIENTISTS.

Scenes from Institute for Personality Assessment, University of California. Three or four adults taking paper and pencil tests.

DR. MACKINNON

WE HAVE FOUND CREATIVE INDIVIDUALS TO BE MORE OPEN TO EXPERIENCE BOTH OF THE OUTER WORLD AND OF THE INNER SELF. MOREOVER, THEY HAVE A STRONG CONCERN FOR BOTH THE THEORETICAL AND THE AESTHETIC. IT IS NOT ENOUGH TO SOLVE A PROBLEM - THE SOLUTION MUST BE ELEGANT.

Adult with hand on planchette of Ouija board. Another is in a hypnotic trance.

DR. MACKINNON

THEN, TOO, CREATIVITY HAS A LARGE UNCONSCIOUS COMPONENT WHICH IS NOT EASILY MEASURED WITH TRADITIONAL PAPER AND PENCIL TESTS. INSTEAD WE TURN TO AUTOMATIC WRITING, TO DREAM ANALYSIS AND TO RESPONSES UNDER HYPNOSIS. THE CREATIVE PERSON SEEMS TO HAVE CLOSER ASSOCIATION BETWEEN CONSCIOUS AND UNCONSCIOUS PROCESSES, MEANING HE HAS A LARGER RESERVOIR OF COGNITIVE EXPERIENCES ON WHICH TO DRAW.

DR. TORRANCE

THIS FACT PROBABLY ACCOUNTS FOR INTUITION AND FOR LIGHTNING-LIKE FLASHES OF INSIGHT THAT CREATIVE PEOPLE SO OFTEN REPORT. THEY DON'T KNOW HOW THEY THEY DO IT.

DR. MACKINNON

EXACTLY. AND I WISH WE HAD BETTER MEASURES OR INDICES OF THE PROCESS.

DR. BECK

SO PERHAPS THE FLEXIBLE CHILD OR ADULT IS MORE LIKELY TO BE IN TOUCH WITH HIS UNCONSCIOUS IMPULSES?

DR. TORRANCE

HERE IS A CRITICAL POINT. HOW DO WE CREATE A CLASSROOM CLIMATE WHERE THE CHILD WITH CREATIVE POTENTIAL CAN BE FREELY CREATIVE. MY RESEARCH INDICATES THAT THE CREATIVE EFFORTS OF THE CHILD IN SCHOOL OFTEN ARE SUPPRESSED.

DR. TAYLOR

WHETHER CHILDREN ARE FREE TO ENGAGE IN SPONTANEOUS BEHAVIOR, TO BE ORIGINAL, TO INVENT, RESTS ON "THE SYSTEM". WE NEED CREATIVE SYSTEMS AS WELL AS CREATIVE TEACHERS.

DR. EDLING

I AM REMINDED AT THIS POINT OF AN ELEMENTARY SCHOOL-----

Cut to Lula Walker Elementary School, Ampitheater District, Tucson, Arizona. This is a new district with all buildings, elementary, junior high and senior high, built on a trapezoidal pattern to promote maximum freedom for team teaching, ungraded classes, flexible scheduling, and staff-pupil innovation.

DR. EDLING

. . . IN THE AMPITHEATER DISTRICT NEAR TUCSON, ARIZONA. THIS SCHOOL HAS NO FORMAL CLASSROOMS AS SUCH. THE CHILDREN HAVE LARGE WORK AREAS AND ARE FREE TO USE ALL THE RESOURCES OF WHAT REALLY CONSTITUTES A LEARNING LABORATORY. CLASSES ARE BOTH FLEXIBLY SCHEDULED AND UNGRADED. STAFF MEMBERS POST SCHEDULES AT THE BEGINNING OF THE DAY. FROM THERE ON EACH CHILD PROGRAMS HIMSELF, USING LIBRARY, A.V. MATERIALS, PROJECT MATERIALS, AND SO ON. IT IS NOT UNUSUAL TO OBSERVE TEAM TEACHING ACROSS AREAS: A SCIENCE TEACHER AND AN ART TEACHER WORKING TOGETHER.

Scenes of children planting seeds in an experimental plot, and at the same time doing lovely water colors to reveal their ideas and feelings about the project.

DR. EDLING

ALL ADULTS IN THIS SCHOOL, INCLUDING THE CUSTODIANS AND SECRETARIES, FUNCTION AS COUNSELORS. THE CHILD IS FREE TO SEEK OUT ANY ADULT FOR SUCH HELP AND GUIDANCE AS HE DESIRES.

DR. BECK

BESIDES A CLIMATE FOR CREATIVITY, I THINK WE NEED IMAGINATIVE USES OF MEDIA, AND THE GENERATION OF NEW KINDS OF MEDIA FOR CREATIVE THINKING.

Junior high teacher shown passing out sets of 2x2 slides to class, every set in random order. Students study slides in individual viewers, arrange them in an order personally pleasing, and then each writes a short, short story, illustrating it with the slides Students are fascinated and delighted with theme variations from same input.

DR. STARKWEATHER

I RECALL THE INGENIOUS USE THAT A JUNIOR HIGH TEACHER . . .

Classroom scenes. Dr. Starkweather's voice over.

DR. STARKWEATHER

. . . MADE OF COLORED SLIDES. SHE PASSED OUT A SET OF SIX SLIDES TO EACH PUPIL WHICH THE PUPIL COULD ARRANGE IN ANY ORDER HE CHOSE. EACH PUPIL THEN WROTE AN ILLUSTRATED SHORT, SHORT STORY FROM THE SLIDES.

Cut to classroom scene. Girl is reading her short, short story, illustrating it with the slides as she proceeds. Girl is followed by boy who does the same. Class is delighted by variations in stories and original use of slides.

DR. TORRANCE

THIS NOVEL USE OF SLIDES RECALLS SOME TAPE RECORDINGS I MADE ABOUT THE EARLY LIVES OF GREAT MEN. ONE WAS BRAILLE WHO DEVELOPED THE BRAILLE ALPHABET AS A BOY.

Cut to classroom scene. Teacher is playing a bit of the recording. Then all pupils are blindfolded and move about to experience what it is like to be blind.

DR. TORRANCE Voice over classroom sequences.

A TEACHER USED THE RECORDING BUT BEFORE THE DISCUSSION, SHE HAD THE PUPILS PUT ON BLINDFOLDS AND MOVE ABOUT TO GET THE FEEL OF BEING BLIND.

Scenes of pupils groping around in classroom, some with hands out, some using pencils to tap with, some almost immobilized, etc.

DR. BECK

I'LL BET AFTER THIS EXPERIENCE THE PUPILS COULD TALK WITH FAR DEEPER FEELING AND UNDERSTANDING ABOUT BRAILLE. WE NEED MORE MATERIALS OF THIS KIND, ESPECIALLY TO PROMOTE PRODUCTIVE THINKING. LET ME SHOW YOU A COUPLE EXAMPLES OF WHAT I MEAN.

Short excerpts are shown from two scientific children's films produced in Germany pertaining to research work in the Galapagos Islands and at the Max Plank Institute of Comparative Behavior near Munich. The first excerpt deals with sign stimuli used by baby fishes to identify the mother fish. The fishes in question are mouth breeders and the excerpt shows to the delight of children and adults alike how the baby fish rush in and out of the mother's mouth and respond to plastic models of adult fish

The film poses the question about cues the little fish use to identify the mother. After raising the question, and the film can be stopped at this point for discussion, the film goes on to demonstrate through appropriate experiments what these sign stimuli are. In short, the film offers many opportunities for hypothesizing and then proceeds to test the hypotheses. The second film sequence retraces the steps of Darwin in the Galapagos Islands. It portrays the various species of finches which were largely responsible for the development of his evolutionary theory. But the film asks what Darwin would be most interested in if he were to return to the Galapagos Islands today. And then the picture brings children to the forefront of scientific thinking by showing one species of finches using a cactus spine as a tool to search for grubs in decayed limbs. This particular finch breaks off the spine, probes for the grub, irritates it, lays down the spine, and seizes the grub as it emerges from the limb. Through the use of a tool the finch fills an ecological niche and, in effect, converts itself into a

woodpecker. It is significant that there are no woodpeckers in the Galapagos Islands. Both of these excerpts nicely illustrate the use of media for the stimulation of productive thinking and inquiry-training.

DR. BECK

IN THESE FILM EXCERPTS WE SEE HOW A CRITICAL PROBLEM CAN BE PRESENTED TO PUPILS, HOW THE FILM CAN BE STOPPED FOR DISCUSSION, AND HOW CONCLUSIONS MIGHT BE REACHED THAT ARE ON THE FOREFRONT OF SCIENTIFIC KNOWLEDGE. THESE FILMS ARE QUITE UNLIKE MOST EDUCATIONAL MOVIES THAT DEAL WITH TIRED TOPICS AND CONCLUDE WITH AN END TITLE AS THOUGH EVERYTHING IMPORTANT HAS BEEN SAID ON THE SUBJECT.

DR. EDLING

IN THIS CONNECTION, I AM REMINDED OF THE TEACHING OF DR. POSTLETHWAITE, A BOTANY PROFESSOR AT PURDUE UNIVERSITY. HE HAS ESTABLISHED A MODEL LABORATORY IN WHICH THE STUDENTS PRETTY MUCH TEACH THEMSELVES.

DR. BECK

THAT'S RIGHT. AND I THINK WE MIGHT WELL VIEW A FILM EXCERPT WHICH TELLS THE STORY OF THE CREATIVE USE OF "MEDIA SYSTEMS" WHICH DR. POSTLETHWAITE HAS EVOLVED.

This excerpt has Dr. Postlethwaite describing his own laboratory, his use of audio tapes, single concept films, and botanical specimens to support and enrich programed material in a workbook. Among other things, the film sequence shows how, through the creative use of media,

Dr. Postlethwaite and his staff are freed from routine chores of teaching, thus permitting them to work with students individually and to stimulate more resourceful learning. In the course of the year, Dr. Postlethwaite comes to know each of his 800 botany students personally by name. Moreover, the achievement of the students has markedly increased with the number of A and B grades increasing ten-fold, and the F's decreasing proportionately. The students in successive years voted the botany course the most stimulating and innovative course in the lower division curriculum and Dr. Postlethwaite the outstanding professor at Purdue.

DR. TAYLOR

ONE OF THE KEYS TO THIS WHOLE SYSTEM OF TEACHING IS THE RECOGNITION OF INDIVIDUAL DIFFERENCES AND PROVISION FOR INDEPENDENT LEARNING.

DR. STARKWEATHER

YOUR COMMENT RAISES THE ISSUE OF COMPUTER-ASSISTED INSTRUCTION. DR. SUPPES AT STANFORD, FOR EXAMPLE, AND DR. SILBERMAN AT SYSTEM DEVELOPMENT CORPORATION BOTH HAVE CLASSROOM PROGRAMS WITH COMPUTERS TO TEACH SMALL CHILDREN.

Cut to filmed examples of children talking back to TV screens on which programed material is presented. Children are shown learning words (or solving arithmetic problems) presented automatically with

computer feedback. The point to be made in this sequence is that teachers, freed from routine of exposition, now can give more time to individual children. The teacher becomes a director of learning more than a conveyor of information and a slave of drill.

DR. GUILFORD (summarizing)

THIS EXAMPLE NICELY ILLUSTRATES THE CHANGING ROLE OF THE TEACHER WHO, WITH THE HELP OF A COMPUTER, BECOMES A CREATIVE DIRECTOR OF LEARNING ACTIVITIES, AND NOT A MERE CONVEYOR OF INFORMATION.

DR. TAYLOR

THIS NOTION OF PERMITTING CHILDREN TO DO THINGS ON THEIR OWN AND IN THEIR OWN WAY IS FURTHER ILLUSTRATED IN THE TEACHING OF MODERN DANCE BY VIRGINIA TANNER AT THE UNIVERSITY OF UTAH.

Film sequence illustrating how Miss Tanner encourages children to work out their own rhythmic patterns to convey their impressions and feelings. Children, through dance, express the texture of objects, the weather, the flow of traffic, the meaning of age, occupational roles, etc.

DR. MACKINNON

THIS KIND OF TEACHING UNDOUBTEDLY BUILDS BRIDGES BETWEEN CONSCIOUS AND UNCONSCIOUS PROCESSES.

DR. BECK

UNQUESTIONABLY, MUCH OF WHAT WE DESCRIBE AS THE UNCONSCOUS IS CONVEYED THROUGH EXPRESSIVE MOVEMENTS MORE THAN THROUGH LANGUAGE. OR PERHAPS IT IS MORE APPROPRIATE TO SAY THAT THROUGH EXPRESSIVE MOVEMENTS WE CAN FIND WORDS TO TALK ABOUT OUR INNER CREATIVE SELVES.

DR. GUILFORD

AND THIS MAY WELL BE THE HEART OF THE PROBLEM OF CREATIVITY, OF INSPIRATIONAL FEELINGS, OF PRODUCTIVE THINKING.

DR. MACKINNON

IT IS THE DRAWING ON ALL OUR RESOURCES IN FREE AND UNINHIBITED WAYS THAT MAKES FOR SPONTANEITY--FLUIDITY OF IDEAS--CREATIVITY.

DR. TAYLOR

SO TO SUMMARIZE OUR CONFERENCES ON CREATIVITY WE HAVE ARRIVED AT THE CONCLUSION AS TEACHERS THAT WE SHOULD WORK TOWARDS THE GOAL OF THE BEST FOR EACH. TO DO THIS, WE MUST RECOGNIZE INDIVIDUAL DIFFERENCES. AND THROUGH MEDIA AND RELATED RESOURCES, INTEGRATED AS A TEACHING SYSTEM, TEACHERS CAN BE FREED TO WORK EASILY AND COMFORTABLY WITH PUPILS IN THE DIRECTION OF FOSTERING CREATIVITY.